CERTIFICATION

I, Shigeru Yanagihara, of Yanagihara & Associates, 310, Toranomon Garden 10-4, Toranomon 3-Chome, Minato-Ku, Tokyo 105-0001, Japan, hereby certify that the following is a true and correct translation, to the best of my knowledge and belief, of essential portions of JP 54-99972A.

Place Tokyo

Date April 27, 2006

Shigeru YANAGIHARA

(English translation of essential portions of JP 54-99972 A)

Japanese Patent Kokai Sho-54-99972

laid open on August 7, 1979

Patent Application No. sho-53-6890

applied for a patent on January 25, 1978

Inventors: Yuji Kato and four others

Applicant: Showa Densen Denran K.K.

Title of the Invention: Process for producing flexible printed board

Patent Claim:

A process for producing flexible printed board, characterized in that a silicone-grafted polyolefin film is subjected to an inactivation treatment of selected portion and, then, the film is brought into contact with an electrically conductive metal with heat treatment to thereby cause the metal to be attached to the polyolefin film at predetermined portion.

Description of the Invention:

The present invention relates to a process for producing flexible printed board.

In the past, flexible printed board is produced by sticking a copper film on a plastics sheet using an adhesive and dissolving off the copper layer in requisite portions by chemical etching to leave a printed metal pattern thereon.

The present invention provides a process for producing flexible printed board permitting massproduction of a large number of flexible printed boards in a simple and economical way. According to the present invention, a silicone-grafted polyolefin film as disclosed in Japanese Patent Publication No. Sho-48-1711 is used as the substrate sheet. The surface of such a silicone-grafted polyolefin sheet may easily be brought into activated state by simply heating it .

In the first example of the present invention, a silicone-grafted polyolefin film is coated with an inactivating agent, such as vinyl acetate, over a region excluding the area on which an electroconductive layer has to be formed in a requisite pattern, so as to permit surface of the polyolefin film in the non-coated patterned area to be brought into activated state upon metal plating by immersion of the so-coated film in a hot metal-plating liquor, in order to produce a flexible printed board having deposited metal layer in a requisite pattern. If necessary, the so-deposited metal layer may be thickened by electroplating technique.

In another example of the present invention, a silicone-grafted polyolefin film is coated on the surface thereof in a pattern of contemplated electric circuit with an acrylic coating resin, such as polymethacrylate resin, using a coating device, such as printing roller, whereupon the resulting coated film is subjected to a hot steam treatment by holding it in a hot steam in order to bring the areas not coated with the coating resin into inactivated state. Then, the coated resin is dissolved off by acetone or ethylene glycol, whereupon the so-treated polyolefin film is immersed in a metal plating liquor with heating, as described above. The surface area coated with the coating resin is hereby brought into activated state, on which metal plating is effected to form electric circuit of contemplated pattern.

The silicone-grafted polyolefin has a high heat resistance and can withstand a high soldering temperature, so that it can be used for many practical uses including production of electronic circuit boards.